

Access to Information and Communication Technology for Empowering Children in Nigeria

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Abstract

The global interest for the advancement of education in the world has been challenged by Information and Communication Technology (ICT). The opportunity for technology to be a force for innovation, education and change in Nigeria has been widely acknowledged with digital tools now recognized for their positive effects on children across the country. Thus, there is a need to develop the children' hard skills like technical and digital literacy as well as their self-concept which includes, self-confidence, critical thinking and ability to use social network. Also, the immense contribution of ICT to the development of children knowledge and acquisition of skills in the different subjects in the school curriculum cannot be over-emphasized. This paper will outline the benefits of ICT, and diverse ways in which it has empowered children.

Keywords: *Accessibility, Information and Communication Technology, (ICT), Children Empowerment,*

Introduction

The National Policy on Education (2004) places emphasis on the provision and utilization of Information and Commission Technology (ICT) when it points out the prominent role of Information and Communication Technology in advancing knowledge and skills necessary for effective functioning in the modern world, thus, there is urgent need to fully integrate Information and Communication Technology (ICT) into the educational system of Nigeria. ICT utilization in schools especially in the primary setting is very important in order to introduce the children to technology, early enough. Students have shown that ICT enhance learning. This method has been embraced by developed countries. However, it is sad to note that Nigeria is still some fifty years behind the educationally advanced counties of the world (Okonjo, 2000).

Good education is the right of every child, but this is not the case in Nigeria especially in the rural areas, due to under resources in schools limiting the potentials of children. It is important to emphasis at this juncture that in principle ICTs can facilitate access to information, which can have a positive impact on the lives of the children. Accessibility therefore, consists of multiple dimensions such as availability, affordability and skills necessary for the use of the technologies (Gerster & Zimmermann, 2003). Information Communication Technology is part of children's world today because it is relevant in developing different skills among children. Children are growing up in a world where social media, mobile, technology and online communities are fundamentals to the way that they communicate and develop. However, the Nigerian educational system has not adequately exposed children, teachers, and schools to the realities of ICT tools and skills that would help the children to embrace the new media or technologies. Since ICT has come to stay, it is essential to train and prepare teachers adequately for its implementation into the

curriculum. Although, Nigerian Government has made some efforts towards the provision of basic tools for teaching/learning and application of ICT to schools, accessibility to ICT tools is still limited to few schools in urban areas. Thus, there is a need to expose children to the benefit of ICT because it will empower them. This paper will therefore focus on the nexus between ICT accessibility and empowerment of children in Nigeria.

What is Information and Communication Technology (ICT)?

Information and Communication Technology is a term that has been described by many scholars in different ways due to its widely acceptance. Pradeep (2016) describes ICT as the method of gathering, storing, manipulating, processing and communicating desired types of information in a specific environment. While Murray (2011) states that Information and Communication Technology (ICT) is an extensional term for information technology(IT) that stresses the role of unified communication and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage and audio visual systems which enable users to access, store, transmit and manipulate information. UNESCO (2005) stresses further that ICT is the combination of computer, telecommunication and media technologies. In other words, ICT as a term is broader than computer. In the same view, Bhirton (1999) cited in Chifwepe (2008) stresses further that ICT is an embracing concept that includes the system, process and people that are involved with technologically mediated communication. Mohammed (2017) corroborates that ICT is considered as technologies used for collecting, storing, editing and passing information in different forms within an environment, between and among given environment. Thus, it is a diverse set of technological tools and resources used to communicate and to create, disseminate and store much information.

Obanya (2002) defines ICT as broad term that has to do with the harnessing of process, the methods and the products of electronic and communication related technologies and other related resources in today's knowledge driven society. The National Policy for Information Technology (2001) defines ICT as computer, auxiliary equipment, software and firmware (hardware) and procedures, services and related resources. The document views ICT as any equipment or interconnected system of equipment that is used in the automatic acquisition, storage, manipulation, management, control, display, switching and transmission of information. ICT has globally revolutionized education methodology. This is reflected in the concept of computer aided teaching and computer aided learning. Also, the internet has become a fundamental part of social life as it provides largest simple source of information and reference materials found anywhere in the world. Nevertheless, interactive multimedia technology can provide new ways to draw upon children's natural impulses. Information and Communication holds an abundance of materials which include voice, music, graphics, photos, animation and video. These technologies can expand the range of learning experiences, opening up the social and natural worlds. Children can explore the relations among ideas and thus experience a more connected form of learning. It is important to stress that these technologies are interactive, and conducive to active, engaged learning. According to Semenov (2005) learning is driven by the individual needs and interests of the learner. In other words, children can choose what to see and do, and they have media to record. Similarly, Olakulehin (2000) states that many countries now regard understanding ICT basic skills and concepts as part of education alongside reading, writing and numeracy. Trucano (2005) explains further that Information and Communication

Technology has the potential for not only introducing new teaching and learning practices, but also for acting as a catalyst to revolutionize the education system, hence, it empowers teachers and learners and promotes the growth of skill necessary for the 21st century.

It should be emphasized that pedagogic application of ICT involves effective learning with the aid of Computer and other Information Technologies, serving the purpose of learning aids, which plays complementary roles in teaching/learning situations rather than supplement to the teacher/facilitator. Sinha (2008) enumerates a wide range of impacts of information and communication technologies on education as follows:

1. Education will become highly interactive engaging the students every 20 seconds or so for a response much in contrast to present day and passive lecture methods;
2. Education will become highly individualized with world -accessible records or learning attempts by particular student to enable computer presentation of education tailored for each students past learning experiences and styles;
3. Education will become highly flexible in interaction, enabling natural language tutoring;
4. Education will become highly accessible, opening opportunities for the disadvantaged in the country and
5. Education will become highly computer mediated.

Importance of Information and Communication Technology in Education

Information and communication technology (ICT) is very vital in the development of educational system in Nigeria. This is because ICT facilitates the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational system, improve policy formulation, execution and widen the range of opportunities in the lives of children and youth. ICT is utilized to enhance teaching effectiveness. It is a challenging process that involves three levels: Macro, Meso and Micro (Onuma, 2007). The macro level determines the National policy on ICT and education outlines various educational Information Technological needs of the society and implementation procedures of ICT at various institutional levels of education. The meso level specifically deals with educational institutions digesting and translating the policy into practice. Meso level charges the institutions with the responsibilities of providing the personnel and facilities needed for the full implementation process of the ICT. The micro level is the implementation process of the ICT that is the implementation procedure using the curriculum through the various skills of using the curriculum through the various skills of interactions and ICT tools. Similarly, Mohammed (2006) accedes with the above view that classroom teachers are expected to utilize ICT facilities to include relevant knowledge to students. It means any classroom teacher with adequate and professional skills in ICT utilization will definitely have his/her students perform better in classroom learning.

Besides, the application of computers and other communication technologies in education was divided into three broad categories: Pedagogy, training and continuing education (Thomas and Ranga (2002) cited in Olakulehin, 2000). The pedagogical applicability of the ICTs is concerned essentially with effective learning with the aid of the various components of ICT. Almost all the subjects ranging from mathematics

(the most structured) to music (the least structured) can be learnt with the help of computers.

Role of ICT in Child Development

Information and communication technology has become an important part of daily life of children. On a typical day, children from ages 3-5 spend an average of four hours with technology and its uses are increasing among children of all ages (Daugherty & Dossami; 2014). Research conducted by Donohue (2015) and Haugland (1992) affirm that ICT assist in improving children's developmental skills such as verbal, problem-solving, long-term memory, abstraction and literacy. Concisely, ICT is relevant in developing different types of skills children need in their lives Stanborough (2019) and Bell (2016) postulate the following skills:

Fine Motor Skills: These are small movement that occurs in the hands, wrists, fingers, toes, lips and the tongues. These are the smaller movements that occur; picking up and objects between the thumb and finger, using the mouse to click, or elect an object or shape. According to study materials ICT requires many precision movements. Therefore, children will develop fine motor skills to accurately control the mouse, clicks and dragging a cursor to select or highlight items and texts. Fine motor skills is about small muscles movement in coordination with the eyes, however, the fine motor skills do not go in isolation from other skills.

Gross Motor Skills: It involves movement of the arms, legs, feet or the entire body, this include action like running, rocking, walking, swimming and other activities, Gross motor skills can be enhanced when the children use the white board to record things, as they stretch and punch, bounce various part of the white board and also using large pens to write on the screen.

Creative Development: Provision should be made for software that the children will use to learn their expiration employing elements of play, exploring alternative approaches will help children to employ imaginative thing thereby developing their creativity. Children will play around with colors and graphics, dragging and dropping items unto the screen.

Mathematical Development: Computer offers dynamic visual images that open up some areas of mathematical development in children. The use of ICT has a great impact on how mathematics can be taught to children. The programs will aid children and offer them opportunities to match shapes and carry out simple mathematical bonding and they play and learn at the same time. Computer graphics allow children to share mental images and patterns of structure, counting images or icons on the home screen will assist them to develop early mathematical skills like most shapes, size, quantity and patterns.

Language Development: ICT should not only be computer based. It is important to develop an integrated holistic and valid approach which will encourage children to develop their language skills such as listening, memory, expressing thoughts, ideas and feelings are gained. Children are able to use the key board to write simple words and their names.

Increase in Confidence: ICT can be helpful and interesting if used in the right way and placed in the right way. Children have uncanny knack of learning to master new technology and they prefer to be left alone with Smartphones, tablets, games, computer and consoles and use their intuition to confidently swipe screen and press buttons screen. Screens can be beneficial to learning and the more children are left to interact independently, the more they develop confidence.

Increase in World Knowledge: Children have to appreciate that modern technology is around to stay so; they should be able to use the sense of investigation and exploration to develop their skills of learning.

Challenges of using ICT by the Children

Information and Communication Technology has been applauded for its various contributions in the lives of children. Nevertheless, it has some short comings according to Swanenathan (2015) as follows:

1. Learning toys may dampen educational potential as most interactive toys are made based on mundane educational tasks. These may provide some motivational for learning at first, but young kids may get bored, stop learning, if they are not mastered the operational aspects of clicking, scrolling or pressing actions.
2. Operational problems could be solved by tablets, computers does not encourage innovative learning.
3. Increases aggressive responses from playing violent video games. It disrupts sleep; children need at least twelve hours sleep per day for them to grow healthy.
4. Encourages sedentary lifestyles as mentally stimulating as they are, technological devices do not promote physical activity. Children need to move about as it helps them build strong muscles and learn what their bodies can do. When a sedentary lifestyle becomes a habit, children will face increased risk of obesity.
5. Leads to technology addiction, some children are addicted to technology, they hardly create time to study or concentrate in class. "All their thoughts are on game"
6. Lack of skilled manpower to manage available system and inadequate training facilities for ICT education.
7. Access to the technology especially in a country like Nigeria due to low income of majority of the parents and schools on their own cannot acquire the necessary ICT tools.

Conclusion

The impact of Information and Communication Technology in education cannot be overemphasized because it facilitates more equitable access to information. ICT have a lot to offer as potential ways to support and amplify the impact of a variety of child-focused development. Also, children are increasingly using ICT and technology as learning tools. Therefore, Nigerian government should endeavor to provide some of the ICT tools commonly used in classroom for educational purposes in order to bridge the gap between Nigeria and developed countries.

Recommendations

This paper has shown the importance of information and communication tools in empowering children through disposition learning thereby building self-confidence and increases their skills in using technology.

1. Parents and schools should strike a balance, as it is impossible to completely restrict the use of technology.
2. Introduce digital media that has fewer distracting interactive features (e.g. pop-ups, hotspots.)
3. Choosing digital media with multimedia features that supports understanding (e.g. animation).
4. Research apps before purchasing them.
5. Use apps that engage children and stimulate their thinking creativity and problem-solving abilities.

6. Get children involved in outdoor sports.
7. Parents should be advised to keep all gadgets 30 minutes before bedtimes, read or sing, or recite bedtime stories to them.
8. All gadgets especially television and laptop should be removed from bedrooms.
9. Lastly, television and phones must be put away during meals.

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